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A Preliminary Report on the Mammals Collected by Thomas MacDougall in Southeastern Oaxaca, Mexico

By George G. Goodwin

This is the fourth publication on the small mammals MacDougall collected for the American Museum of Natural History between the years 1943 and 1955. Reports on the new forms of cotton rats, white-footed mice, and tree rats have already been published in American Museum Novitates Numbers 1705, 1732, and 1734 (1955).

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BATS

In the Oaxaca collections there is a fair series of bats preserved in spirits, representing six families and 19 species, not including two apparently new subspecies of large, free-tailed bats.

As some of the known species appear to be new records for the State of Oaxaca, the following list may be useful for future reference:

Balantiopteryx plicata
Chilonycteris rubiginosa mexicana
Pteronotus davyi fulvus
Micronycteris megalotis mexicana
Macrotus mexicanus mexicanus
Glossophaga soricina leachii
Carollia subrufa
Artibeus jamaicensis jamaicensis
Artibeus lituratus palmarum
Artibeus aztecus

Desmodus rotundus murinus
Natalus mexicanus mexicanus
Myotis fortidens
Myotis nigricans extremus
Dasypterus intermedius
Rhogeëssa parvula tumida
Corynorhinus rafinesquii mexicanus
Tadarida mexicana
Tadarida femorosacca

The two new forms, a *Eumops abrasus* and a *Molossus pretiosus,* not only extend the range of these species much farther north than was previously known, but they are here recognized as new subspecies.

Eumops abrasus oaxacensis, new subspecies

OAXACA MASTIFF BAT

TYPE: A.M.N.H. No. 165943, skin and skull, prepared from a specimen preserved in spirits; adult male; Mazatlán, about 3000 feet elevation, District of Mixes, Oaxaca, Mexico; collector, Thomas MacDougall; February 17, 1954; original no. 1286. The type skin is in good condition except for a bare patch on the lower back, and the skull is complete.

GENERAL CHARACTERS: A large, free-tailed, blackish bat with moderately long, velvety pelage, a very small, pointed tragus, and large, broad antitragus, similar in general characters to *Eumops abrasus milleri* (Allen) from Santa Rosa de Huaybamba, Peru, but smaller and lacking the small anterior upper premolar present in *milleri.*

DESCRIPTION OF TYPE: The color of upper parts is uniform very dark Seal Brown,[1] almost black, extreme base of hairs indistinctly dull grayish white, under parts like back, with a small tuft of white hairs around gular sac on throat; ears, flying membranes, and feet black; wing membranes without any fur along margin of forearm.

Skull hourglass shaped, strongly built but slender and tapered posteriorly, sagittal crest present but low, highest in interorbital region; lambdoidal crest moderately well developed, squared across posteriorly and extending slightly beyond supraoccipital but not approaching the extreme extent seen in typical *abrasus;* lacrimal ridge slightly developed; third commissure on m^3 weakly developed, the posterior half of the outer edge of this tooth short. The small anterior upper premolar usually present in most species of *Eumops* absent on both sides, and the canines are in contact with the large premolar; outer, lower incisors crowded in from

[1] Capitalized color terms are after Ridgway, "Color standards and color nomenclature," Washington, D. C., 1912.

tooth row; palate ending on level with posterior border of molars but extending slightly beyond it medially; basisphenoid pits relatively small and shallow.

MEASUREMENTS OF TYPE: (Measurements of the type of *Eumops a. milleri* in parentheses). Skins: total length, 127 mm. (127); length of tail, 46 (46); hind foot, 14, dry, 11.5 (16); forearm, 58.3 (58.2); third metacarpal, 56.8 (57.8); first phalanx, 26.4 (26.5); second phalanx, 23.2 (24). Skulls: greatest length exclusive of incisors, 23.1 (24.1); condylobasal length, 19.8 (20); zygomatic breadth, 14.8 (14); palatal length, 14.8 (14); interorbital breadth, 4.5 (4.6); breadth of braincase, 11 (10.1); breadth across canines, 6.3 (6.2); width across lambdoidal crest, 9 (8.9); breadth of palate across m^2–m^2, 9.6 (9.4); length of maxillary tooth row, 9.3 (9.5).

REMARKS: *Eumops a. oaxacensis* needs comparison only with *E. a. milleri* with which it corresponds in general characters, but the tooth row is shorter, the skull relatively shorter and broader than in the latter form, and there is no trace of a small, anterior, upper premolar in the type of *oaxacensis.*

The type, and only known specimen, of *Eumops maurus* Thomas from Kanuku Mountains, British Guiana, is the only other species in the genus in which the anterior upper premolar is absent, but in *maurus* the palate extends posteriorly beyond the level of the last molars. Previously, the most northern record for the species *abrasus* seems to have been Guatemala (Goodwin, 1934, Bull. Amer. Mus. Nat. Hist., vol. 68, p. 16).

Eumops abrasus oaxacensis is actually about the same size as *Eumops glaucinus* (Wagner), but it differs externally from the latter in having a very small tragus with a sharply rounded tip instead of a comparatively large, broad tragus squared across the top, and the pelage is deep blackish brown instead of reddish Seal Brown. Color, however, may not be a diagnostic character. The braincase in *oaxacensis,* as in *abrasus,* is constricted posteriorly so that the lambdoidal crest is narrow transversely. In *glaucinus,* the braincase is not tapered posteriorly, and the lambdoidal crest is broad and squared across transversely and does not overhang the supraoccipital as it does in *oaxacensis.*

Molossus pretiosus macdougalli, new subspecies

MACDOUGALL'S FREE-TAILED BAT

TYPE: A.M.N.H. No. 145150, skin and skull prepared from a specimen preserved in spirits; adult female but not old; San Blas, 3 kilometers southeast of the city of Tehuantepec, about 100 feet elevation, Oaxaca, Mexico; collector, Thomas MacDougall; September 5, 1946.

The skin of the type is in good condition, and the skull is complete.

GENERAL CHARACTERS: A medium-sized, uniformly colored, blackish free-tailed bat of the *Molossus rufus* group. It has soft, velvety pelage, a small, sharply pointed tragus, broad, thick antitragus, square across the top. It is about the size of *Molossus pretiosus* Miller from La Guaira, Venezuela, but the fur on the forearms is more restricted, and the wings are longer.

DESCRIPTION OF TYPE: Color of upper parts uniform very dark Seal Brown, almost black; extreme base of hairs indistinctly dull grayish; under parts like back but not quite so dark; ears, membranes, and feet blackish.

Skull short and massive, with relatively low and weak sagittal and lambdoidal crests, similar in size to that of *M. pretiosus* but with a somewhat larger braincase.

MEASUREMENTS OF TYPE: (Measurements of the type of *M. pretiosus* in parentheses). Skins: total length, 113.3 mm. (123); length of tail, 43 (44); length of hind foot, 11 (11.4); forearm, 48.7 (45.4); third metacarpal, 48.5. Skulls: greatest length, exclusive of incisors, 20 (21); condylobasal length, 19; basal length, 16.4 (18); median palatal length, 7.3 (7); interorbital constriction, 4.3 (4); zygomatic breadth, 12.7 (13); breadth of braincase, 10.4 (10.6); greatest height of sagittal crest, 1.0 (1.8); width across m^3–m^3, 9.7 (9.5); maxillary tooth row, exclusive of incisors, 7.8 (8); mandibular tooth row, exclusive of incisors, 8.9 (8.8).

REMARKS: *Molossus pretiosus macdougalli* is much larger and needs no comparison with *Molossus sinaloae* J. A. Allen. In external measurements it could come within the extreme range of individual variation for *Molossus nigricans* Miller, but the skull is smaller, with a much smaller braincase, even when compared with an immature female, with sagittal crest undeveloped, from Acaponeta, Tepic, as shown by the following measurements of the type and the latter specimen, respectively: greatest length, 20.0 mm., 21.4; maxillary tooth row, 7.8, 8.2; mandibular tooth row, 8.9, 9.3; breadth of braincase, 10.4, 10.9. Except for longer wings and slightly larger braincase, *M. p. macdougalli* is very similar to *M. pretiosus,* but the sagittal and lambdoidal crests do not even approach the extreme develoment seen in the latter typical form. So far as I know, the species *M. pretiosus* has not previously been recorded north of the Isthmus of Panama. It is hoped that MacDougall will get additional specimens of this bat to substantiate my diagnosis, especially as *M. nigricans* is known to occur in southern Oaxaca, and the only tangible difference between *pretiosus* and *nigricans* appears to be that of size.

POCKET GOPHERS

Twelve specimens of giant pocket gophers were collected by MacDougall in southeastern Oaxaca. One, from La Gloria, is *Heterogeomys hispidus tehuantepecus* Goldman.

An apparently adult female from Ingenio Santo Domingo is tentatively referred to *Orthogeomys cuniculus* Elliot because of its small size and the geographical position of the locality. Cranial measurements of this specimen and of the type of *O. cuniculus* in parentheses are as follows: condylo-incisive length, 58.2 mm. (57.9); zygomatic breadth, 36.5 (35.5); interorbital constriction, 14 (11.7); length of nasals, 22.5 (25.7); width of rostrum, 14.2 (13.8); alveolar length of maxillary tooth row, 13.6 (13.2).

An immature male from Coatlán, 3000–4000 feet elevation, has rather long, thick, coal black pelage and, except for the color, is perhaps nearer to *O. grandis nelsoni* Merriam than to any other local form, but it is too young for conclusive identification.

One individual from the San Pedro Range and an old male with a broken skull from Santa Lucía, between 3000 and 4000 feet elevation, apparently represent a new subspecies of the *O. grandis* group. Six other specimens from Morro Mazatán on the coastal lowlands and one from Limón are referable to this new form, though they are not typical.

Orthogeomys grandis carbo, new subspecies

BLACK GIANT POCKET GOPHER

TYPE: A.M.N.H. No. 165988, skin and skull, adult male though not fully grown; Escurano, altitude 2500 feet, Cerro de San Pedro, 20 kilometers west of Mixtequilla, District of Tehuantepec, Oaxaca, Mexico; collector, Thomas MacDougall; November 6, 1953; original no. 1242. The skin is in good condition; the skull is complete, with temporal ridges grown together in a low sagittal crest, and most of the sutures are closed or fused together. The tail measurement seems a little excessive, but it is difficult to check on the dried skin.

GENERAL CHARACTERS: A medium-sized (for the *O. grandis* group) pocket gopher with coarse, short, scanty, blackish pelage, not completely covering the soiled, whitish skin in any place; nasal pad small and naked; skull narrow, with short, broad rostrum.

DESCRIPTION OF TYPE: Color of pelage on upper parts, legs, arms, and feet uniform Fuscous Black, tail naked, blackish, with a few scattered hairs on proximal third; a small area around the mouth with hairs white to roots; under parts more sparsely haired than back but similar in shade of color.

Skull narrow and heavy, with short, broad nasals and very broad rostrum owing to the broadening of the ascending branches of the premaxillae which are 6.5 mm. wide as compared with a maximum of 5.5 in *O. g. scalops* Thomas; premaxillae short and not reaching posteriorly to the plane of the orbits; maxillary branch of zygoma very broad, the superior border where it joins the premaxillae frontal very broad and restricting the forward expansion of the lateral branch of the frontal; nasals cuneate, short, and very broad anteriorly, emarginate posteriorly; frontal region slightly depressed, broad, and not constricted between orbits, the sides nearly parallel.

MEASUREMENTS OF TYPE: (Measurements of an adult male with a crushed skull from Santa Lucía, and an adult female and an adult male [skull only] from Morro Mazatán, respectively, in parentheses). Skins: total length, 375 mm. (366, 334, —); length of tail, 138 (130, 100, —); length of hind foot, 44 (51, 47, —). Skulls: greatest length, 63.1 (72, 67, 71); condylo-incisive length, 60.5 (70, 63.8, 70); zygomatic breadth, 36.9 (41.5, —, 40.8); greatest breadth across squamosals, 36.8 (—, 38.7, 30.9); interorbital breadth, 14 (14.6+, 13.9, 14); squamosal constriction over auditory meatus, 25 (27, 26, 27.3); length of nasals, 21.5 (24.6, 24.5, 22.3); greatest breadth of nasals, 8.5 (10.2, 9, 9.3); greatest breadth of rostrum, 17.4 (18.2, 14.7, 17); width of ascending branches of premaxillary at junction with maxillary branch of zygoma, 6.3 (7, 5, 5.3); alveolar length of maxillary tooth row, 14.5 (15.2, 14.8, 15).

REMARKS: *Orthogeomys grandis carbo* is smaller and blacker in color than *O. g. alleni* from Acapulco, 2000 feet elevation, Guerrero, and has a noticeably wider frontal region, shorter nasals, and smaller teeth. The type of *O. g. scalops* from Tehuantepec probably came from east of the Río Tehuantepec, and specimens collected by Nelson and Goldman at San Geronimo Ixtepec are probably typical. They are much browner than any in the series of *O. g. carbo,* with considerably longer and thicker pelage, and differ from the new form in having wider zygomatic arches, narrower and more slender rostrum, longer and narrower nasals. *Orthogeomys g. nelsoni* from Mt. Zempoaltepec, 8000 feet elevation, is a larger animal, with thicker and longer pelage than *O. g. carbo,* and it has long, narrow nasals.

Orthogeomys grandis carbo apparently occupies the arid, tropical mountain slopes and adjacent lowlands along the Pacific coast from the Rio Tehuantepec westward to south central Oaxaca.

SPINY POCKET MICE

Two species are represented in the series of *Liomys.* One, an appar-

ently new form of *Liomys irroratus,* seems to be the most southeastern record for this species.

The majority of the specimens are tentatively referred to *Liomys pictus isthmius* Merriam. This series, mostly from the southern slopes of the mountains, shows a considerable range in size and in color variation. Some specimens from the lower, arid mountain slopes are as red as typical *L. pictus* (Thomas) from Sinaloa. Others, from the humid mountain slopes, are almost as dark as *L. pictus veraecrucis* Merriam, and often have a well-defined, buffy, lateral line, and the outside of the forearm buffy. Still others are dark gray in color, with scarcely a trace of a buffy, lateral line and without buffy hairs mixed with the spines. Two individuals from Ixcuintepec are referred to *L. pictus veraecrucis* on size characters, though in color pattern they approach *L. pictus phaeurus* Merriam of the arid Pacific coast region in western Oaxaca.

Liomys irroratus yautepecus, new subspecies

YAUTEPEC SPINY POCKET MOUSE

TYPE: A.M.N.H. No. 149921, skin and skull, adult female with well-worn teeth; Rancho Sauce, 5000 feet elevation, San Pedro Jilotepec, District of Yautepec, Oaxaca, Mexico; collector, Thomas MacDougall; October 29, 1952; original no. 1206. The skin of the type is in good condition. The skull is complete except that the zygomatic arches are broken, and the nasal bone is chipped. A second specimen of this form was collected in the rocky, pine woods at Santo Tomás Quierí, 6000 feet elevation, and a third in a cloud forest, 7000 feet elevation, at Santo Tomás Teipan, both locations being in the District of Yautepec.

GENERAL CHARACTERS: A rather large, long-tailed, spiny pocket mouse, with blackish pelage, sharply bicolor tail, faint buffy lateral line, and ears distinctly edged with white. It is about the size of *L. i. irroratus* (Gray) from the high, interior plains and mountain slopes of central Oaxaca, but color darker, tail relatively longer, and differing from the typical form in cranial details.

DESCRIPTION OF TYPE: The color of upper parts is Dark Mouse Gray mixed with Ochraceous-Tawny hairs; entire under parts, including fore and hind feet, white; a buffy lateral line faintly indicated; outside of forearms grayish; ears blackish, edged with white; tail sharply bicolor, upper side Dark Mouse Gray, under side to tip white; extreme tip dusty all around in the type, and one of the other two specimens has a white pencil.

The skull is large and heavy, with widely spreading zygomatic arches; rostrum broad and evenly tapered forward; the premaxillae especially

wide, and the maxillary root of the zygoma heavy; nasals narrow, emarginate posteriorly and exceeded by premaxillae; bullae large and inflated; dentition heavy, the anterior molar as broad as premolar; posterior molar very small and cylindrical; interparietal oval and relatively small. Interpterygoid fossa squarely U-shaped.

MEASUREMENTS OF TYPE: (Measurements of a large female from Santo Tomás Quierí in parentheses). Skins: total length, 280 mm. (290); length of tail, 163 (160); length of hind foot, 31, dry, 32 (32, dry, 34). Skulls: greatest length, 34.2 (34.9); zygomatic breadth, 15.7 (16.1); interorbital breadth, 8.3 (8.5); length of nasals, 13.8 (14.7); width of braincase, 13.7 (13.7); alveolar length of upper molar series, 5.1 (5.5).

REMARKS: *Liomys irroratus yautepecus* needs comparison only with *L. i. irroratus*. Externally it can be distinguished from the typical form by its darker color and longer tail, and in cranial characters, mainly in the noticeably broader and heavier rostrum in all three examples. In *irroratus* the rostrum broadens abruptly posteriorly, whereas in *yautepecus* the rostrum is tapered evenly forward, much as in the genus *Heteromys*.

RICE RATS

Most of the rice rats collected by MacDougall come from the tropical lowlands and foothills of the Isthmus of Tehuantepec. Specimens of *Oryzomys couesi* from the coastal plains and up to 2000 feet in dry areas are pale ochraceous buff in color, with white under parts, and are here referred to the subspecies *mexicanus*. Those from slightly higher elevations in humid valleys are noticeably darker than the lowland specimens and have the light Ochraceous-Buff under parts of typical *couesi*. The pygmy rice rat, *O. fulvescens lenis* Goldman, is represented by only two specimens from the inland basal mountain slopes.

A small series of *Oryzomys alfaroi* collected on the humid, forested mountain slopes at Santa María Chimalapa differs sufficiently in general characters from other local forms to be considered as representative of a new geographical subspecies.

Oryzomys alfaroi gloriaensis, new subspecies

GLORIA RICE RAT

TYPE: A.M.N.H. No. 166014; skin and skull; adult male, molariform teeth showing considerable wear; La Gloria, rain forest, about 2500 feet elevation, 10 kilometers south of Santa María Chimalapa, District of Juchitán, Oaxaca, Mexico; collector, Thomas MacDougall; April 1, 1954; original no. 1304. The skin of the type is in good condition, and

the skull is complete except for a break in the supraoccipital. Besides the type, there are three topotypes, including two adult females and a young male.

GENERAL CHARACTERS: A small, dark-colored rice rat with very short, close pelage, long, unicolor tail, resembling typical *O. alfaroi* (J. A. Allen) from Costa Rica more than any of the closer geographical forms, but tail longer, color duller and less rufescent, and it is characterized by cranial details.

DESCRIPTION OF TYPE: Color of upper parts Ochraceous-Buff heavily mixed with black, becoming bright Ochraceous-Buff on cheeks, shoulders, and sides of body; under parts dull white thinly overlying the broad, dark basal color of the hair; tip of nose black; inside and outside of ears black and sparsely covered with blackish hairs; tail almost naked, blackish and nearly unicolor, only faintly paler below; feet dull white, with elongated, silvery tufts of hairs on the toes of hind feet that project beyond the claws.

Skull medium in size for the species but rather narrow and elongated, with a relatively long, swollen rostrum, high, rounded braincase, relatively broad interorbital region, and moderately large molariform teeth.

MEASUREMENTS OF TYPE: (Measurements of an adult female topotype in parentheses). Skins: total length, 225 mm. (215); length of tail, 127 (115); length of hind foot, 26 (25); length of ear from notch in dry skin, 14.4 (13.7). Skulls: greatest length, 27.3 (26.7+); zygomatic breadth, 14.3 (14); interorbital breadth, 5 (4.9); width of braincase immediately in front of occipital crests, 10.7 (10.5); length of nasals, 11.1 (11.1); length of anterior palatine foramina, 4.2 (4); length of palatal bridge, 5.5 (5.4); alveolar length of maxillary tooth row, 3.85 (3.9).

REMARKS: *Oryzomys alfaroi gloriaensis* is decidedly smaller in all measurements and has a relatively narrower skull and shorter rostrum than *O. a. caudatus* Merriam from Comaltepec, Oaxaca. It is larger, darker, and has a heavier and more elongated skull than *O. guerrerensis* Goldman from Omilteme, Guerrero. *Oryzomys a. gloriaensis* is larger than *O. a. chapmani* Thomas of Jalapa, Veracruz, with closer pelage and has buffy instead of tawny for the basic color of the hair. It differs from *O. a. angusticeps* from Volcán Santa María, Guatemala, in smaller size and duller and shorter pelage.

Oryzomys a. gloriaensis apparently occupies the humid forested northern slopes of the Pacific coastal range of the Sierra Madre in eastern Oaxaca.

Two other specimens, one from Petapa, Mazatlán, and one in spirits from Río Grande, Yautepec, are referred to this new form.

CACOMISTLES

The range of the cacomistles of the genus *Bassariscus* is generally considered as confined in Mexico mainly to the high interior plateau extending down into the upper part of the tropical zone. The presence of a single specimen in the coastal region of southeastern Oaxaca now extends the known range of this genus and indicates what seems to be a hitherto undescribed tropical lowland form.

Bassariscus astutus macdougalli, new subspecies

SALINA CRUZ CACOMISTLE

TYPE: A.M.N.H. No. 148977, skin and skull, adult male; La Ventosa, Salina Cruz, coastal lowlands, 20 kilometers south of the city of Tehuantepec, Oaxaca, Mexico; collector, Thomas MacDougall; January 31, 1950; original no. 837. The flat skin is in unworn pelage and in good condition. The skull is complete, with all sutures fused together.

GENERAL CHARACTERS: A rather large, buffy grayish cacomistle, with relatively short, coarse pelage; soles of fore and hind feet thinly haired around digital pads; claws fine, small, and retractile; inguinal mammae, 2-2; most closely allied to *Bassariscus astutus bolei* Goldman from Chilpancingo on the slope of Sierra Madre del Sur, Guerrero, but pelage coarser and more heavily overlain with black; fore and hind feet whiter; cranial details, especially heavier dentition, distinctive.

DESCRIPTION OF TYPE: Ground color of upper parts in general Pinkish Buff; somewhat paler on head and shoulders than on back; heavily overlain with black, the dark-tipped hairs thinning out along lower sides of body and outer sides of limbs; inner sides of limbs, throat, and under side of neck to fore limbs clear Pinkish Buff; the roots of hair Pale Smoke Gray; rest of under parts creamy white to roots of hair; upper sides of fore feet white; inner side of hind feet white, outer side white, mixed with black-tipped hairs; outer side of ears dusky on basal half, becoming solid whitish on distal half and thinly clothed with whitish hairs internally; face dusky, with buffy white patches above and below eye, the lower patch confluent with light color of throat; lips and chin white; orbital ring and sides of muzzle, including base of supraorbital vibrissae, blackish; tail with seven sharply defined white rings, alternating with black rings, the white rings confluent along median line below; tip of tail black.

Skull is similar in general characters to that of *Bassariscus a. bolei* but dentition heavier; braincase depressed behind orbits; anterior upper premolar widely spaced from second. Postorbital constriction elongated,

and the narrowest point is 6.7 mm. behind postorbital processes.

MEASUREMENTS OF TYPE: (Measurement of type of *B. a. bolei,* an adult male, for comparison in parentheses). Skins: total length, 825 mm. (850); length of tail, 420 (420); length of hind foot, 70 (80). Skulls: greatest length, 85.4 (84.8); condylobasal length, 83.9 (84.5); zygomatic breadth, 53 (56.5); breadth of rostrum (over roots of canines), 16.2 (16.7); interorbital breadth, 16.3 (16); maxillary tooth row (alveolar), 32.4 (31.7); crown length of upper carnassial (outside), 7.7 (7); crown width, 5.2 (5.1); crown length of upper molar, 5.7; crown width of upper molar, 8.3.

REMARKS: A subadult male from Tenango, Oaxaca, about 2000 feet elevation, 35 kilometers from the coast, is here provisionally referred to *Bassariscus astutus bolei.* It has decidedly longer, softer, and grayer pelage than *macdougalli.* The under parts of this individual are dull buffy gray, and all four feet are uniform grayish.

It may be of interest to note here that the two genera of cacomistles, *Bassariscus* and *Jentinkia,* were both taken at Tenango, showing that their ranges overlap.

Few cacomistles of the *sumichrasti* group are represented in any museum and none of the typical form from Veracruz is available in the United States. MacDougall's collection of six specimens, which seem to represent a new geographical form, is a welcome contribution to our collections.

Jentinkia sumichrasti oaxacensis, new subspecies

OAXACA FOREST CACOMISTLE

TYPE: A.M.N.H. No. 148975, skin and skull, fully adult male; rain forest, about 2600 feet elevation, La Gloria, 10 kilometers southeast of Santa María, District of Juchitán, southeastern Oaxaca, Mexico; collector, Thomas MacDougall; January 12, 1950; original no. 786. The type is a flat skin in fresh, unworn pelage and in good condition; the skull is complete.

GENERAL CHARACTERS: A large, richly colored cacomistle, with blackish muzzle and feet; tail with light rings, becoming obsolescent on posterior third; claws large and not retractile; soles of feet naked; similar in general characters to *Jentinkia s. campechensis* Nelson and Goldman from the Yucatán Peninsula, but larger, darker, and more richly colored.

DESCRIPTION OF TYPE: Ground color of upper parts from head to shoulders Light Buff, grading to Warm Buff on back and rump, heavily

overlain with black-tipped hairs, darkest on top of head, shoulders, and median line of back; basal half of hair Pale Smoke Gray. Sides of head, face, and around muzzle finely mixed black and buffy white, broken by whitish patches above and below eye, the latter being confluent with the light color on throat; a narrow black ring around eye; under parts, including inner sides of limbs, Light Ochraceous-Buff, brightest along lateral line and becoming white in inguinal region; roots of hair on under parts white; fore and hind feet blackish brown; ears large but narrow, rounded at tip and blackish brown externally, margin of ear white, internally sparsely clothed with white hairs; tail long and bushy, with six complete white rings from base finely mixed with black hairs, alternating with black rings, succeeded on distal third by four obsolescent light rings only discernible on under side and terminating in a black tip.

Skull of type relatively short and broad, with a moderately well-developed sagittal crest posteriorly; postorbital processes strongly developed and directed backward; rostrum relatively short and broad; bullae moderately large and inflated.

MEASUREMENTS OF TYPE: (Measurements of a fully grown male of *J. s. campechensis* from La Tuxpena, Campeche, in parentheses). Skins: total length of skin, 994 (974); length of tail vertebrae, 552 (506); length of hind foot, 90 (89). Skulls: greatest length, including incisors, 90.6 (87.8); condylobasal length, 85 (83); zygomatic breadth, 58.5 (60.8); breadth of braincase, 36.3 (34.8); breadth of rostrum over roots of canines, 17.5 (16.8); interorbital breadth, 17 (17.2); postorbital constriction, 16.3 (14.1); alveolar length of maxillary tooth row, 33.5 (32.4); upper carnassial, length along outside, 6.3 (6.3), crown width, 5.7 (5), crown diagonal, 8.3 (7.6); large upper molar, length along outer side, 6.1 (5.3), width, 8.1 (7).

REMARKS: Compared with *Jentinkia s. campechensis, J. s. oaxacensis* is larger, with a heavier rostrum, stronger dentition, richer color, and deeper and softer pelage.

Jentinkia s. oaxacensis is similar in size to *J. s. variabilis* (Peters), but darker and richer in color, with larger molariform teeth. Typical *J. s. sumichrasti* (Saussure) is apparently a decidedly larger and more gray-colored form, though no typical specimens from Veracruz are available for comparison. Five specimens of *oaxacensis* from elevations of about 3000 feet in the region around Tenango, Oaxaca, just west of the Río Tehuantepec, may be nearer to the typical *sumichrasti* than to *oaxacensis*. They average larger in size and lighter and grayer in color than the present type, with the outer side of the ears extensively white instead of blackish brown, and the skulls, though variable, average larger.

TABLE 1

MEASUREMENTS (IN MILLIMETERS) OF *Jentinkia sumichrasti oaxacensis* FROM THREE LOCALITIES WEST OF THE RÍO TEHUANTEPEC

	Guiengola Adult ♀ A.M.N.H. No. 145160	Tenango Adult ♂ A.M.N.H. No. 147574	Tres Cruces Subadult ♂ A.M.N.H. No. 148804
Skin			
Total length	905.0	992.0	980.0
Length of tail vertebrae	490.0	515.0	510.0
Length of hind foot	62.0	94.0	95.0
Skull			
Greatest length	86.7	—	95.3
Condylobasal length	82.4	—	89.3
Zygomatic breadth	57.0	66.3	53.6
Interorbital breadth	18.0	19.7	16.6
Breadth of rostrum over canines	16.6	—	17.2
Breadth of braincase	35.8	35.7	36.8
Alveolar maxillary tooth row	33.4	—	34.8
Length of upper carnassial (outer side)	6.5	7.2	7.0
Crown width	5.2	6.0	5.7
Length of large upper molar (outer side)	6.0	6.6	5.6
Width of large upper molar	7.6	8.1	7.6

MacDougall tells me that he occasionally saw these cacomistles leaping through the tree tops soon after dusk in the evening and at dawn in the early morning, but that they were never seen about in broad daylight.

SPOTTED SKUNKS

I am inclined to agree with authors who are of the opinion that most, if not all, of the named forms of *Spilogale* are geographical variations of two species, *putorius* and *pygmaea*. A series of spotted skunks in the MacDougall collection from the coastal plains and up to elevations of about 2000 feet on the Pacific side of the Isthmus are all referable to *Spilogale putorius tropicalis* A. H. Howell except one, a pygmy, which is here recognized as a new subspecies.

Spilogale pygmaea albipes, new subspecies

OAXACA PYGMY SKUNK

TYPE: A.M.N.H. No. 143378, skin and skull, fully adult male; Las

Cuevas, in the valley of and on the eastern side of the Río Tehuantepec, 17 kilometers northwest of the city of Tehuantepec, Oaxaca, Mexico; collector, Thomas MacDougall; February 2, 1944; original no. 87. The type skin is a well-made study specimen and in good condition. The skull is complete except that the mastoid is broken.

GENERAL CHARACTERS: A very small, short-tailed, spotted skunk, with dorsal stripes continuing in unbroken lines from top of head to base of tail, and a transverse white band across face over eyes. It is similar in general characters to *Spilogale p. australis* Hall from Acapulco, Guerrero, Mexico, but is larger and differs in detailed cranial characters, especially in the longer and narrower skull and in the heavier upper molariform teeth.

DESCRIPTION OF TYPE: Color of upper parts Mummy Brown, with four parallel whitish stripes down body. The median pair of dorsal stripes is grayish owing to a mixture of black and white hairs, the white predominating; each stripe is divided at the middle of back into two narrow stripes, the outer one of which is continued transversely until it joins a broad, white, lateral stripe on lower sides of body confluent with the white on fore feet, while the inner one extends across the rump where it branches, one line extending transversely down hips to the under side of body where it nearly joins the corresponding stripe on the opposite side, the other extending backward to base of tail. A narrow white band on each thigh is confluent with the white on hind feet. Outer pair of dorsal stripes white, broadest behind ears, and terminating at or in front of hips. Middorsal stripe Mummy Brown, extending from crown of head to base of tail in a narrow, unbroken line. A broad, white stripe across face above eyes is confluent with white behind ear and outer dorsal stripe. Chin blackish brown, with two narrow white lines diverging from center and converging with white below ear; ears blackish brown, with lower margin white. A small patch of white hairs on chest between forearms. Muzzle, including eyes and back to white throat lines, Mummy Brown. Upper surface of fore and hind feet white in continuation at front with white lateral stripe, inner side of fore and hind feet blackish, continuous with the black of under parts; claws whitish. Upper side of tail white mixed with blackish hairs, darkest at base and becoming white at extreme tip; under side of tail white to roots of hairs.

Skull narrow and high crowned, crests and ridges indistinct except the basioccipital crest which is moderately well developed; postorbital processes reduced to a fine point; interorbital width only fractionally less than intertemporal width; braincase relatively high and narrow; temporal ridges undeveloped; interpterygoid space wide, the sides nearly

straight and only slightly converging posteriorly; bullae moderately well inflated; rostrum strongly attentuated; palate relatively long and ending posteriorly on a line across posterior border of alveoli of upper molars; large upper molar strong, about as broad as long and square across on inner side.

MEASUREMENTS OF TYPE: (Measurements of type of *S. p. australis,* an adult male, and type of *S. pigmaea* Thomas, an adult female, respectively, in parentheses). Skins: total length, 248 mm. (240, 250); length of tail, 69 (72, 68); length of hind foot, 33 (33, 34). Skulls: greatest length, 43.5; occipito-nasal length, 40.5 (38, 41.5); basilar length, 36 (35.7, 36.6); zygomatic breadth, 25 (24, —); mastoid breadth, 22? (20.8, 25.8); breadth of braincase above mastoids, 20; width of rostrum across roots of canines, 9.5; interorbital width, 11.7 (11.6, 12); palatilar length, 15 (14, 15); postpalatal length, 21.2 (21.7,—); foramen magnum to m^1, 20.5 (—, 20.8); height of cranium, 15.4 (14, 15.5); alveolar length of maxillary tooth row, 13.1 (—, 13.1); width of palate across m^1–m^1, 16 (—, 16.1); length of upper carnassial, 4.7 (—, 4.8); length of m^1, outer edge, 4.5 (—, 4.4), greatest diagonal diameter, 5.5 (—, 5.6); length of m_1, 5.8 (—, 6).

REMARKS: Externally *Spilogale pygmaea albipes* is very similar to typical *pygmaea* Thomas from Rosario, Sinaloa, and to *S. p. australis* but appears to be nearer the former. From *australis* it differs in having a longer palate, more attenuate rostrum, wider interpterygoid space, with sides nearly parallel instead of spoon-shaped; longer and narrower braincase, and the large, upper molar is more massive, and squared across on inner side instead of rounded.

So far there appear to be only three known specimens of the pygmy spotted skunk: one in the British Museum, one in the United States Fish and Wildlife Service collection, and the present specimen. Apparently it spends much of its life under cover. This latest specimen was trapped in a hollow tree. The Washington example was caught in a trap set below the surface of the ground in the burrow of a giant pocket gopher. All three known specimens came from the low Pacific coastal plain country and may eventually prove to be individual variations of the typical form.

Spilogale pygmaea albipes, however, seems to differ from *S. p. australis* to a greater degree in cranial characters than the latter does from typical *pygmaea.*